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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,818

Applicant(s)

NGUYEN ET AL.

Examiner

Stephen M. D'Agosta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 15-18 is/are allowed.
- 6) ☒ Claim(s) 2,4,6-9,11-14 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 3,5 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 2-13-01 is in compliance and accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings were received on 2-13-01 and have been reviewed by the drafts person and examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, 6-9, 11-14 and 19-24 rejected as being unpatentable over Shtivelman et al. WO9914924 and further in view of Chow et al. US 6,631,258, Thibert et al. US 6,397,058 and Bajzath et al. WO98-54871.

As per **claims 2, 4, 8, 19 and 23-24**, Shtivelman teaches a method of preventing an interrogating MSC from dropping a call when an incoming voice call is made to a called mobile that is operating in data mode having a voice network portion and a data network overlay (title and abstract), said voice network including a called MS, comprising;

Setting an indicator PSTN indicating that the called MS is operating in the data mode (page 3, L21 to page 4, L2)

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Receiving in the interrogating PSTN/MS, the voice call from the calling MS (page 4, L3-12 teaches PSTN and acknowledgement of call waiting)

Determining from the indicator in the PSTN that the called MS is operating in data mode (page 3, L28 to page 4, L2)

Sending from the PSTN a first response, said first response directing the interrogating PSTN to wait for a second response (page 4, L6-12 teaches acceptance/refusal of call)

But is silent on a call set-up timer, an HLR, sending a location request from the MSC to the PSTN and suspending the call setup timer in the interrogating MSC.

The examiner notes that integrated wireless phone/computing devices exist (eg. phones that can compute and web surf, laptops with wireless modems, etc.) which allows for Shtivelman's "computer user" to be connected via a wireless phone/laptop and wireless network. Shtivelman does disclose interaction with a cellular network (page 9, L24-27) which inherently includes MSC/HLR/VLR hardware that always knows the location of the device.

The use of a "timer" is well known in the art and provides a means by which to base decisions upon if an event does not occur within a predefined time period (eg. if no response in 5 rings, transfer call to voicemail). Further to this point is **Chow** who teaches sending a Call Waiting Proceeding message that starts a timer (first call waiting timer). In response, the NSP sends a Play Voice Prompt message including a "call waiting tone" and starts the TCW2 timer (second call waiting timer). Upon receipt of the Play Voice Prompt message the TCW1 timer is cancelled and generates and plays the call waiting tone to the user of Mobile. The user of MS may choose to answer the incoming call by sending a message before T(NoAnswer) expires. The user can also answer the incoming call and place the existing call on hold by pressing the "send" button, which in turn sends an IS-136 Flash with Info message. In response, the VAP sends a Feature Request [Flash with Info] message to the NSP and starts the TCW3 (third call waiting timer) (C73, L40 to C74, L6). Hence, while Shtivelman allows the user to decide when/if to answer a call, the applicant provides a timer which can time-out and drop the call (or redirect it to voicemail).

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With further regard to claim 4, Shtivelman is **silent on** setting an indicator in the HLR. The HLR is known to contain a user's subscriber profile which reflects many things about phone's services, including if it is operating in voice or data mode. **Thibert** teaches a radio network comprising an HLR and SCP. The HLR keeps a subscriber profile which includes a termination service trigger, in addition to keeping track of the subscriber's location. The SCP includes a service profile record which comprises one or more call delivery/termination service options. The service profile record also stores an indication for each group whether an incoming call is to be delivered to the mobile subscriber when roaming in the area or regions covered by the group. A gateway MSC interrogates the home HLR for the subscriber's location when an incoming call is received thereat. The HLR, in turn, depending upon the termination service trigger, queries the SCP for appropriate call delivery options (abstract).

With further regard to claim 8, Shtivelman teaches notification, acceptance and delivery of an incoming call (page 3, L21 to page 4, L12) is **silent on** multiple MSC's. Shtivelman shows a PSTN cloud (figure 1, #100) which can comprise multiple switches/MSC's. Said multiple switches/MSC's would inherently need to communicate to ensure that a call-waiting caller is not dropped.

With further regard to claim 19, Shtivelman does teach accepting and routing of a call AND a "message" (eg. datagram, SMS, email, etc.) indicating data waiting (page 3, L21 to page 4, L12) **but is silent on** a gateway connected to an MDIS and use of an SMS message.

Bajzath teaches connecting to the Internet via ISP gateway hardware which uses TCP/IP protocol.

The examiner notes that SMS messaging in a cellular system is well known in the art and would be used by someone using a wireless phone for call waiting. Further to this point is **Chow** who teaches a subscriber is notified of an incoming call via a Short Message Service (SMS) message with caller ID or a user alert, such as a tone or ringing. Upon receipt of the alert, the subscriber may select from a series of options, how to process and terminate the incoming call. For example, if an incoming call is of high priority and requires immediate attention, the subscriber may decide to answer the

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call immediately, he may opt to provide a delayed answer, or if neither of the prior options is suitable, then the subscriber may opt to send the call to a voice mail system, from which a recorded message can later be retrieved. A default option may include, but is not limited to, forwarding the call, delaying the answer, sending the call to a voice mailbox, or rejecting the call. (C43, L5-49).

With further regard to claim 23, Shtivelman teaches a system (figure 1) with voice/data application server functionality (abstract teaches hardware/software that provides call waiting to computer user) and a PSTN cloud (figure 1, #100) which can comprise multiple switches/MSC's [Said multiple switches/MSC's would inherently need to communicate to ensure that a call-waiting caller is not dropped which reads on "a routing number transmitted to MSC-2"] **but is silent on** an indicator in the HLR user record for data mode operation. Thibert (see above) teaches the HLR storing a user profile which would contain information about the user being in data/voice mode (abstract).

With further regard to claim 24, Shtivelman **is silent on** use of SMS messaging. Chow teaches SMS messaging (C43, L5-59, specifically L45-50).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that a wireless user is located/supported and supports SMS, to provide means for the user to connect via a wireless phone/laptop and receive call waiting alerts via SMS.

As per **claim 6**, Shtivelman teaches claim 4 **but is silent on** comprising a call set-up time in the interrogating PSTN/MSC from expiring while the indication that the voice call is waiting is sent to the MS.

The use of a "timer" is well known in the art and provides a means by which to base decisions upon if an event does not occur within a predefined time period (eg. if no response in 5 rings, transfer call to voicemail).

Hence, while Shtivelman allows the user to decide when/if to answer a call, the applicant provides a timer which can time-out and drop the call (or redirect it to

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voicemail). Further to this point is **Chow** who teaches Call Waiting in a mobile network with multiple timers (C73, L40 to C74, L6).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that the timer does not expire during a waiting voice call, to provide time for both the called party and the network to have time to react and receive the call.

As per **claim 7**, Shtivelman teaches claim 6 **but is silent on** the step including:

Sending from the HLR to the interrogating MSC, a first response to the location request, said first response directing the interrogating MSC to wait for a second response

Suspending the call setup timer in the interrogating MSC.

Shtivelman does disclose interaction with a cellular network (page 9, L24-27) which inherently includes MSC/HLR/VLR hardware that always knows the location of the device.

Chow teaches sending Call Waiting with multiple timers C73, L40 to C74, L6).

Thibert teaches the HLR keeps a subscriber profile which includes a termination service trigger, in addition to keeping track of the subscriber's location and the SCP includes a service profile record which comprises one or more call delivery/termination service options. The HLR, in turn, depending upon the termination service trigger, queries the SCP for appropriate call delivery options (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that the call timer is suspended for HLR-MSC communications, to provide time for the network to connect the call.

As per **claim 9**, Shtivelman teaches claim 8 **but is silent on** further comprising the step of retaining an active user record in the HLR for the called MS when the called MS switches from a voice mode to data mode, said record indicating that the called MS is operating in data mode.

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Thibert teaches the HLR keeps a subscriber profile which includes a termination service trigger, in addition to keeping track of the subscriber's location. The profile would include knowledge of the phone being in either voice or data mode (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that an active record in the HLR indicates MS in data mode, to provide means for the network to understand what mode the phone is in and how much time, to provide means for determining which mode the phone is in so as to know how much time may be required for call setup (eg. more or less).

As per **claim 11**, Shtivelman teaches claim 8 further comprising

Determining from the user record in the PSTN that the called MS is operating in the data mode and

Sending from the PSTN through the data network overlay to the called MS, an indication that the voice call is waiting (page 3, L21 to page 4, L12)

But is silent on an HLR.

Thibert teaches the HLR keeps a subscriber profile which includes a termination service trigger, in addition to keeping track of the subscriber's location. The profile would include knowledge of the phone being in either voice or data mode (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that an HLR is used, to provide means for a user to connect wirelessly via phone/PDA/laptop.

As per **claim 12**, Shtivelman teaches claim 8 **but is silent on** wherein preventing the call setup time in the MSC-2 from expiring includes:

Receiving in MSC-2 the voice call from the calling MS

Sending a location request message from MSC-2 to the HLR

Determine from the user record in HLR that called MS is operating in data mode

Sending from the HLR to the MSC-2 a first response to the location request message, said message directing MSC-2 to wait for a second response

Suspending the call-setup timer in MSC-2.

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Shtivelman does disclose interaction with a cellular network (page 9, L24-27) which inherently includes MSC/HLR/VLR hardware that always knows the location of the device. The PSTN network (figure 1, #100) can contain multiple switches/MSC's which inherently communicate during calls.

Chow teaches Call Waiting functions with multiple timers (C73, L40 to C74, L6).

Thibert teaches the HLR keeps a subscriber profile which includes a termination service trigger, in addition to keeping track of the subscriber's location. The profile would include knowledge of the phone being in either voice or data mode (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that multiple MSC's can interact with an HLR, to provide means for the system to have time to connect to a caller (or called party) not in the home network.

As per **claims 13 and 21**, Shtivelman teaches claim 8/19 further comprising placing an ongoing data/voice call on hold upon determining that the called MS accepted the incoming voice/data call (abstract teaches the invention can accept a voice call while connected to the Internet, which reads on putting the data call on hold).

As per **claims 14 and 22**, Shtivelman teaches claim 14/21 further comprising
Determining that the called MS is switching back to the data/voice mode

Reconnecting the ongoing data/voice call on hold (abstract teaches the invention can accept a voice call while connected to the Internet, which reads on putting the data call on hold – hence, one can receive the voice call, hangup and go back to the data call).

As per **claim 20**, Shtivelman teaches claim 19 **but is silent on** comprising:

Receiving the incoming data call in an application server in the data network
overaly

Sending a data waiting message from the application server to a message center in the voice network portion.

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Chow teaches SMS messaging and use of a Message Center which is known in the art for SMS message functionality (C43, L5-49, specifically L45-50).

It would have been obvious to one skilled in the art at the time of the invention to modify Shtivelman, such that an application server and Message Center are used, to provide means for the "network" to offload call processing functions from the phone/laptop by providing hardware to accomplish these tasks.

Allowable Subject Matter

Claims 1 and 15-18 allowed. Teaches the use of a Power Down Registration Message that includes a Data Mode Indicator and also use of a Registration Cancellation Message (REGCAN) that includes the DMI. *The applicant states that the DMI is added ANSI-41 REGCAN message as a new field.*

Claims 3, 5, 10 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims also teach use of DMI.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Devillier et al. US6,366,661
2. Garland et al. US6,493,445
3. Asprey et al. US 6,529,596
4. Benson US 6,104,800

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

SMD

3-16-04

A handwritten signature, possibly reading "RP", is written in black ink below the typed name and date.